

Title (en)

METHOD FOR THE IN VITRO PROGNOSIS OF INDIVIDUALS HAVING MULTIPLE MYELOMA AND METHOD FOR THE TREATMENT THEREOF

Title (de)

VERFAHREN ZUR IN-VITRO-PROGNOSE VON INDIVIDUEN MIT MULTIPLEMYELOM UND VERFAHREN ZUR BEHANDLUNG DAVON

Title (fr)

PROCÉDÉ DE PRONOSTIC IN VITRO D'INDIVIDUS ATTEINTS DE MYÉLOME MULTIPLE ET PROCÉDÉ DE TRAITEMENT ASSOCIÉ

Publication

EP 3318642 A1 20180509 (EN)

Application

EP 16306436 A 20161102

Priority

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Abstract (en)

The invention relates to a method for in vitro predicting the outcome of an individual having a multiple myeloma, comprising the steps of: - a) measuring the expression level of at least 5 genes and/or proteins encoded by the said 5 genes, the said genes being selected in a group comprising NRP2, REEP1, SV2B, ARRB1, CACNA1G, FBLIM1, FGFR1, IRF6, ITGA9, NOVA2, PPP2R2C, SLC5A1, SORL1, SYT7 and THY1, in a biological sample obtained from said individual; -b) calculating a score value from said expression level obtained at step a); -c) classifying the said individual as having a good prognosis status or a bad prognosis status, by comparing the score value obtained at step b) with a reference score value.

IPC 8 full level

C12Q 1/68 (2018.01); **A61K 31/4412** (2006.01)

CPC (source: EP US)

A61K 31/4412 (2013.01 - EP); **C12Q 1/6886** (2013.01 - EP US); **G16B 40/10** (2019.01 - US); **G16H 50/30** (2017.12 - US); **C12Q 2600/106** (2013.01 - EP US); **C12Q 2600/112** (2013.01 - EP US); **C12Q 2600/118** (2013.01 - EP US)

Citation (applicant)

- "International Classification of Diseases World Health Organisation Classification", 2016
- KNIGHT, SEMIN ONCOL., vol. 32, no. 4, August 2005 (2005-08-01), pages S24 - 30
- MOREAUX ET AL., HAEMATOLOGICA, vol. 96, 2011, pages 574 - 582
- HAEMATOLOGICA, vol. 92, 2007, pages 803 - 811
- BARALLON ET AL., VITRO CELL. DEV. BIOL. - ANIM., vol. 46, 2010, pages 727 - 732
- HOSE ET AL., HAEMATOLOGICA, vol. 96, 2011, pages 87 - 95
- HOSE ET AL., BLOOD, vol. 113, 2009, pages 4331 - 4340
- MULLIGAN ET AL., BLOOD, vol. 109, 2007, pages 3177 - 3188
- MOREAUX ET AL., MOL. CANCER THER., vol. 11, 2012, pages 2685 - 2692
- DOBIN ET AL., BIOINFORMATICS, vol. 29, 2013, pages 15 - 21
- LOVE ET AL., GENOME BIOL., vol. 15, 2014
- YU; HE, MOL BIOSYST, vol. 12, 2016, pages 477 - 479
- BARALLON, R ET AL.: "Recommendation of short tandem repeat profiling for authenticating human cell lines, stem cells, and tissues", VITRO CELL. DEV. BIOL. - ANIM., vol. 46, 2010, pages 727 - 732, XP055066088, DOI: doi:10.1007/s11626-010-9333-z
- DOBIN, A. ET AL.: "STAR: ultrafast universal RNA-seq aligner", BIOINFORMATICS, vol. 29, 2013, pages 15 - 21
- HOSE, D ET AL.: "Proliferation is a central independent prognostic factor and target for personalized and risk-adapted treatment in multiple myeloma", HAEMATOLOGICA, vol. 96, 2011, pages 87 - 95
- HOSE, D ET AL.: "Inhibition of aurora kinases for tailored risk-adapted treatment of multiple myeloma", BLOOD, vol. 113, 2009, pages 4331 - 4340
- KNIGHT, R: "IMiDs: a novel class of immunomodulators", SEMIN ONCOL., vol. 32, no. 5, August 2005 (2005-08-01), pages S24 - 30
- LOVE, M. I.; HUBER, W.; ANDERS, S: "Moderated estimation of fold change and dispersion for RNA-seq data with DESeq2", GENOME BIOL., vol. 15, 2014, XP021210395, DOI: doi:10.1186/s13059-014-0550-8
- MOREAUX, J ET AL.: "Development of Gene Expression-Based Score to Predict Sensitivity of Multiple Myeloma Cells to DNA Methylation Inhibitors", MOL. CANCER THER., vol. 11, 2012, pages 2685 - 2692, XP055050719, DOI: doi:10.1158/1535-7163.MCT-12-0721
- MOREAUX, J ET AL.: "A high-risk signature for patients with multiple myeloma established from the molecular classification of human myeloma cell lines", HAEMATOLOGICA, vol. 96, 2011, pages 574 - 582, XP055050703, DOI: doi:10.3324/haematol.2010.033456
- MOREAUX, J ET AL.: "TAC1 expression is associated with a mature bone marrow plasma cell signature and C-MAF overexpression in human myeloma cell lines", HAEMATOLOGICA, vol. 92, 2007, pages 803 - 811, XP055148024, DOI: doi:10.3324/haematol.10574
- MULLIGAN, G ET AL.: "Gene expression profiling and correlation with outcome in clinical trials of the proteasome inhibitor bortezomib", BLOOD, vol. 109, 2007, pages 3177 - 3188
- YU, G.; HE, Q.-Y: "ReactomePA: an R/Bioconductor package for reactome pathway analysis and visualization", MOL BIOSYST, vol. 12, 2016, pages 477 - 479

Citation (search report)

- [I] WO 2014056928 A1 20140417 - INSERM INST NAT DE LA SANTÉ ET DE LA RECH MÉDICALE [FR], et al
- [X] LAURIE HERVIOU ET AL: "EZH2 in normal hematopoiesis and hematological malignancies", ONCOTARGET, 19 January 2016 (2016-01-19), United States, pages 2284, XP055360109, Retrieved from the Internet <URL:http://www.impactjournals.com/oncotarget/index.php?journal=oncotarget&page=article&op=download&path[]=6198&path[]=15543> DOI: 10.18632/oncotarget.6198
- [I] J. MOREAUX ET AL: "A high-risk signature for patients with multiple myeloma established from the molecular classification of human myeloma cell lines", HAEMATOLOGICA, vol. 96, no. 4, 20 December 2010 (2010-12-20), pages 574 - 582, XP055050703, ISSN: 0390-6078, DOI: 10.3324/haematol.2010.033456 & J. MOREAUX ET AL: "A high-risk signature for patients with multiple myeloma established from the molecular classification of human myeloma cell lines- supplementary appendix", HAEMATOLOGICA, 20 December 2010 (2010-12-20), pages 1 - 14, XP055051624, Retrieved from the Internet <URL:http://www.haematologica.org/content/haematol/suppl/2011/04/01/haematol.2010.033456.DC2/033456.Moreaux_suppl.pdf> [retrieved on 20130129], DOI: 10.3324/haematol.2010.033456
- [X] KIMBERLY H KIM ET AL: "Targeting EZH2 in cancer", NATURE MEDICINE, vol. 22, no. 2, 4 February 2016 (2016-02-04), pages 128 - 134, XP055253882, ISSN: 1078-8956, DOI: 10.1038/nm.4036
- [X] S. K. KNUTSON ET AL: "Selective Inhibition of EZH2 by EPZ-6438 Leads to Potent Antitumor Activity in EZH2-Mutant Non-Hodgkin Lymphoma", MOLECULAR CANCER THERAPEUTICS, vol. 13, no. 4, 1 April 2014 (2014-04-01), US, pages 842 - 854, XP055247668, ISSN: 1535-7163, DOI: 10.1158/1535-7163.MCT-13-0773

- [I] TIEHUA CHEN ET AL: "Low-risk identification in multiple myeloma using a new 14-gene model", EUROPEAN JOURNAL OF HAEMATOLOGY, MUNSKGAARD, COPENHAGEN, DK, vol. 89, no. 1, 1 July 2012 (2012-07-01), pages 28 - 36, XP002763959, ISSN: 0902-4441, [retrieved on 20120614], DOI: 10.1111/J.1600-0609.2012.01792.X

Cited by

CN1111172274A; EP3995830A1; WO2020212911A3

Designated contracting state (EPC)

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